

Serial No. 10/606,113

Amendment Dated: December 9, 2004

Reply to Office Action Mailed August 9, 2004

Attorney Docket No. 038819.52556US

REMARKS

In response to the objection to Claims 15 and 16 as set forth in the first paragraph of the Office Action, the latter claims have been renumbered as Claims 14 and 15, and have been rewritten in independent form. Accordingly, reconsideration and withdrawal of this ground of objection is respectfully requested.

Claims 1-13 have been rejected under 35 U.S.C. §102(b) as anticipated by Gibson et al (EP 0 349 069). However, for the reasons set forth hereinafter, Applicants respectfully submit that all claims of record in this application distinguish over Gibson et al, whether considered by itself or in combination with other references.

The present invention is directed to an antenna arrangement which includes Vivaldi antenna elements (radiating elements having a tapering slot or notch formed by the element, which produces a linear polarization in the radiated signal). In particular, the dual polarized antenna according to the invention includes first and second substantially planar Vivaldi antenna elements having active portions for receiving or radiating signals from a direction forward of the antenna. The antenna elements have mutually intersecting planes, and phase centers of the active portions of the respective antenna elements are substantially co-located, as recited, for example in Claim

1. Co-location of the phase centers, in turn, is achieved by locating the antenna feed elements at a position which is displaced from an axis which extends through the phase centers and the intersection of the planes of the antenna, at a position to the rear of the active portions.

Gibson et al discloses a dual polarized phased array antenna formed by intersecting two parallel sets of circuit boards, carrying orthogonally polarized antenna elements. As indicated, for example, in the Abstract, the phase centers 16 of the antenna elements relating to one polarization direction are offset from the phase centers of corresponding antenna elements relating to the other polarization direction.

Gibson et al describes in Figures 1a, 1b and 1c certain prior art arrangements in which the phase centers are in fact co-located. However, as indicated at Column 2, lines 36-44 this arrangement, when achieved in the manner provided in the prior art, results in problems. In particular, it is necessary to couple energy to the radiating elements in a non-ideal manner.

In order to solve the latter problem, Gibson et al discloses a non-co-located phase center arrangement. In fact, the Gibson et al reference actually teaches away from the present invention, indicating that it is not possible to provide an arrangement with co-located phase centers and a good feed arrangement.

Serial No. 10/606,113

Amendment Dated: December 9, 2004
Reply to Office Action Mailed August 9, 2004
Attorney Docket No. 038819.52556US

The present invention differs from Gibson et al by providing an arrangement with co-located phase centers, and an offset feed, the offset being relative to an axis extending to the phase centers and the intersection of the phases of the antennas. Neither Gibson et al nor any of the other prior art of record teaches or suggests such an arrangement. Accordingly, Applicants respectfully submit that Claim 1, and therefore all claims of record in this application are allowable.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #038819.52556US).

Respectfully submitted,


Gary R. Edwards
Gary R. Edwards
Registration No. 31,824

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
GRE:kms
351088v1